CDX-4180

SERVICE MANUAL

US Model
Canadian Model
E Model

SPECIFICATIONS

Model Name Using Similar Mechanism	NEW
CD Drive Mechanism Type	MG-363X-121
Optical Pick-up Name	KSS-521A

AUDIO POWER SPECIFICATIONS (US Model)
POWER OUTPUT AND TOTAL HARMONIC DISTORTION
17 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1% total harmonic distortion.

Other Specifications

CD player section

System	Compact disc digital audio system
Signal-to-noise ratio	90 dB
Frequency response	10 - 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 µW*

* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick- up Block.*

Tuner section

FM

Tuning range	US, Canadian model: 87.5 - 107.9 MHz E model: FM tuning interval: 50 kHz/200 kHz switchable 87.5 - 108.0 MHz (at 50 kHz step) 87.5 - 107.9 MHz (at 200 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	
	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 - 15,000 Hz
Capture ratio	2 dB

AM

Tuning range	US, Canadian model: 530 - 1,710 kHz E model: AM tuning interval: 9 kHz/10 kHz switchable 531 - 1,602 kHz (at 9 kHz step) 530 - 1,710 kHz (at 10 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	30 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 - 8 ohms
Maximum power output	40 W × 4 (at 4 ohms)

– Continued on next page –

FM/AM COMPACT DISC PLAYER

MICROFILM

SONY®

SECTION 4
DIAGRAMS

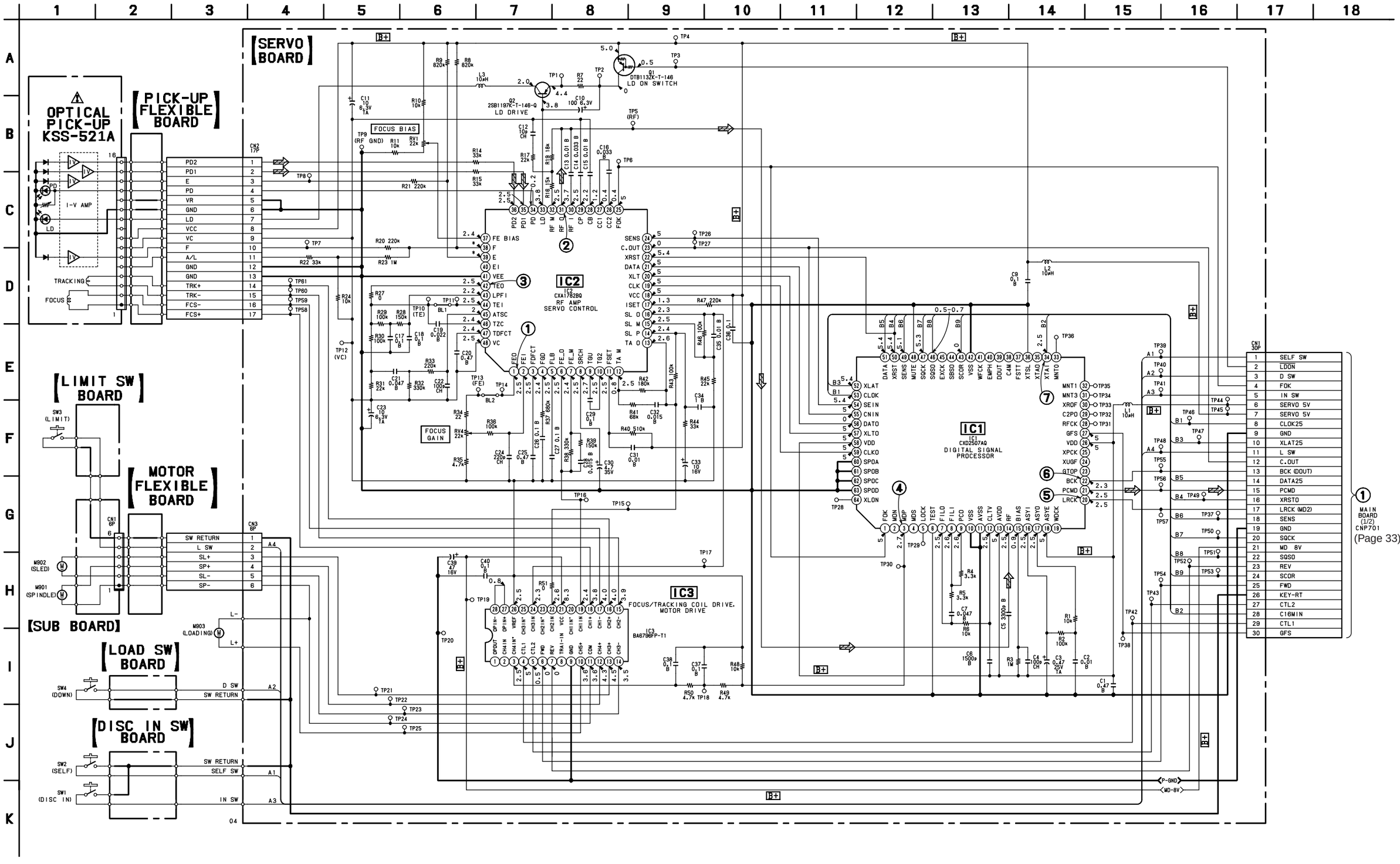
4-1. IC PIN DESCRIPTION

• IC801 μPD17705GC-526-3B9 (SYSTEM CONTROL)

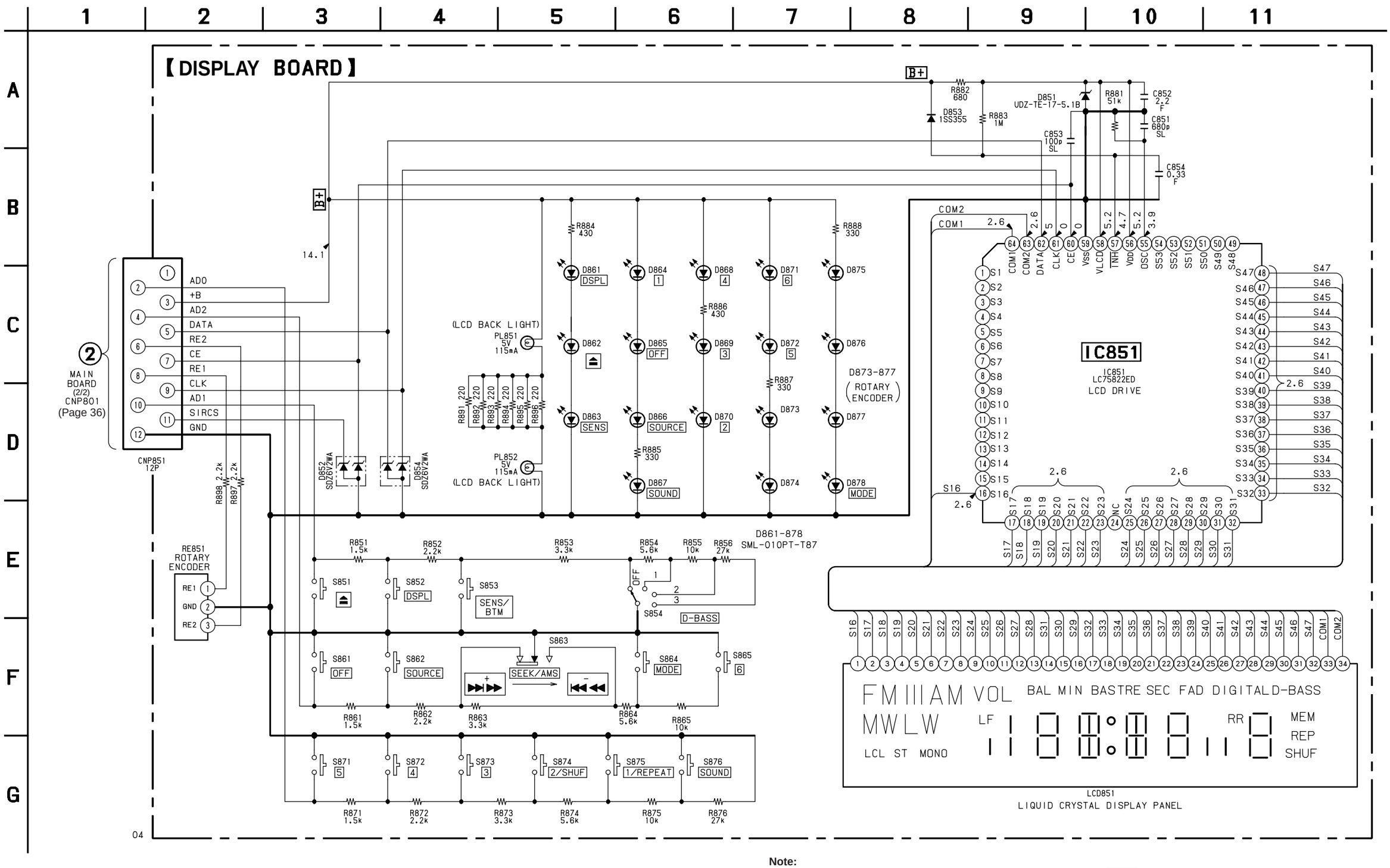
Pin No.	Pin Name	I/O	Pin Description
1	SIRCS	I	SIRCS input (A/D)
2	$\overline{\text{IN-SW}}$	I	CD mechanism position detection
3	$\overline{\text{D-SW}}$	I	CD mechanism position detection
4	$\overline{\text{SELF-SW}}$	I	CD mechanism position detection
5	$\overline{\text{L-SW}}$	I	LIMIT switch
6	LM-EJ	O	Loading motor control (Eject direction)
7	LM-LOD	O	Loading motor control (Loading direction)
8	ANT-ON	O	Power control for amplifier.
9	MONO	O	Force MONO output
10	SD	I	SD signal input
11	BAND-SW	I	Band plan setting of general area.
12	AREA1-SW	I	Destination select 1
13	AREA2-SW	I	Destination select 2
14, 15	RE1, 2	I	Rotary encoder input 1, 2
16	$\overline{\text{SEEK}}$	O	SEEK output
17 – 20	NC	—	Not used.
21	GND3	—	GND
22 – 24	KEYIN3 – 1	I	A/D key input 3 – 1
25	ROT-IN	I	Rotary commander input
26	S-METER	I	FM and AM common signal meter A/D conversion input
27	$\overline{\text{TEST-SW}}$	I	TEST mode select input
28	AM-IFC	I	AM center frequency input
29	FM-IFC	I	FM center frequency input
30	VDD2	—	Power supply (+5 V)
31	VCOH-FM	I	Local oscillation frequency input (FM)
32	VCOL-AM	I	Local oscillation frequency input (AM)
33	GND2	—	GND
34	NC	—	Not used.
35	EO1-PDOUT	O	Error out output
36	TESTO	—	Fixed at “L”.
37	AM-ON(TU-ON)	O	AM power output (AM select)
38	FM-ON(FM/$\overline{\text{AM}}$)	O	FM power output (FM select)
39	LCL/$\overline{\text{DX}}$	O	LOCAL/$\overline{\text{DX}}$ select (“H” : LOCAL, “L” : DX)
40	BEEP	O	BEEP output
41	$\overline{\text{ACC-IN}}$	I	Accessory input
42	SCOR	I	SUBQ data read request
43	MUTE	O	System mute output
44	$\overline{\text{AMP-MUTE}}$	O	Power amplifier mute output
45	TEL-MUTE	O	Telephone mute output
46	NC	—	Not used.
47	VOL-CE	O	Electric volume chip select
48	VOL-CLK	O	Electric volume serial clock
49	VOL-DATA	O	Electric volume serial data
50	EMPHO	O	De-emphasis control output
51	PW-ON	O	System power control
52	MD-ON	O	Loading motor power
53	CD-ON	O	Servo drive power
54	ILL-ON	O	Illumination output
55, 56	MOD1, 2	O	Bus boost control 1, 2
57	NC	—	Not used.
58	LCD-CE	O	LCD drive chip select output

Pin No.	Pin Name	I/O	Pin Description
59	EZ-SEL	I	SHIFT + input
60	SENS	I	Information input from servo IC.
61	FOK	I	Focus OK input
62	$\overline{\text{LD-ON}}$	O	Laser diode control
63	NC	—	Not used. (Connect to GND.)
64	$\overline{\text{ST}}$/MONO	I/O	Used for both STEREO indicator display input and force MONO output. (FM)
65	LCD-CKO	O	LCD driver serial clock output
66	LCD-SO	O	LCD driver serial data output
67	C.ALARM	O	Caution alarm output
68	SQ-CKO	O	Q data read serial clock output
69	CD-RST	O	Servo IC/DAC reset output
70	SQ-SI	I	Q data input
71	CD-SO	O	Serial data output to servo IC.
72	CD-LAT	O	Data latch output to servo IC.
73	CD-CKO	O	Serial clock output to servo IC.
74	VREF	—	Not used.
75	GND1	—	GND
76	X-OUT	—	Crystal oscillator connection (4.5 MHz)
77	X-IN	I	Crystal oscillator connection (4.5 MHz)
78	BU-IN	I	Back-up detection
79	VDD1	—	Power supply (+5 V)
80	$\overline{\text{RESET}}$	I	RESET input

4-4. SCHEMATIC DIAGRAM — CD MECHANISM SECTION — • Refer to page 22 for Waveforms and Note and page 37 for IC Block Diagrams.



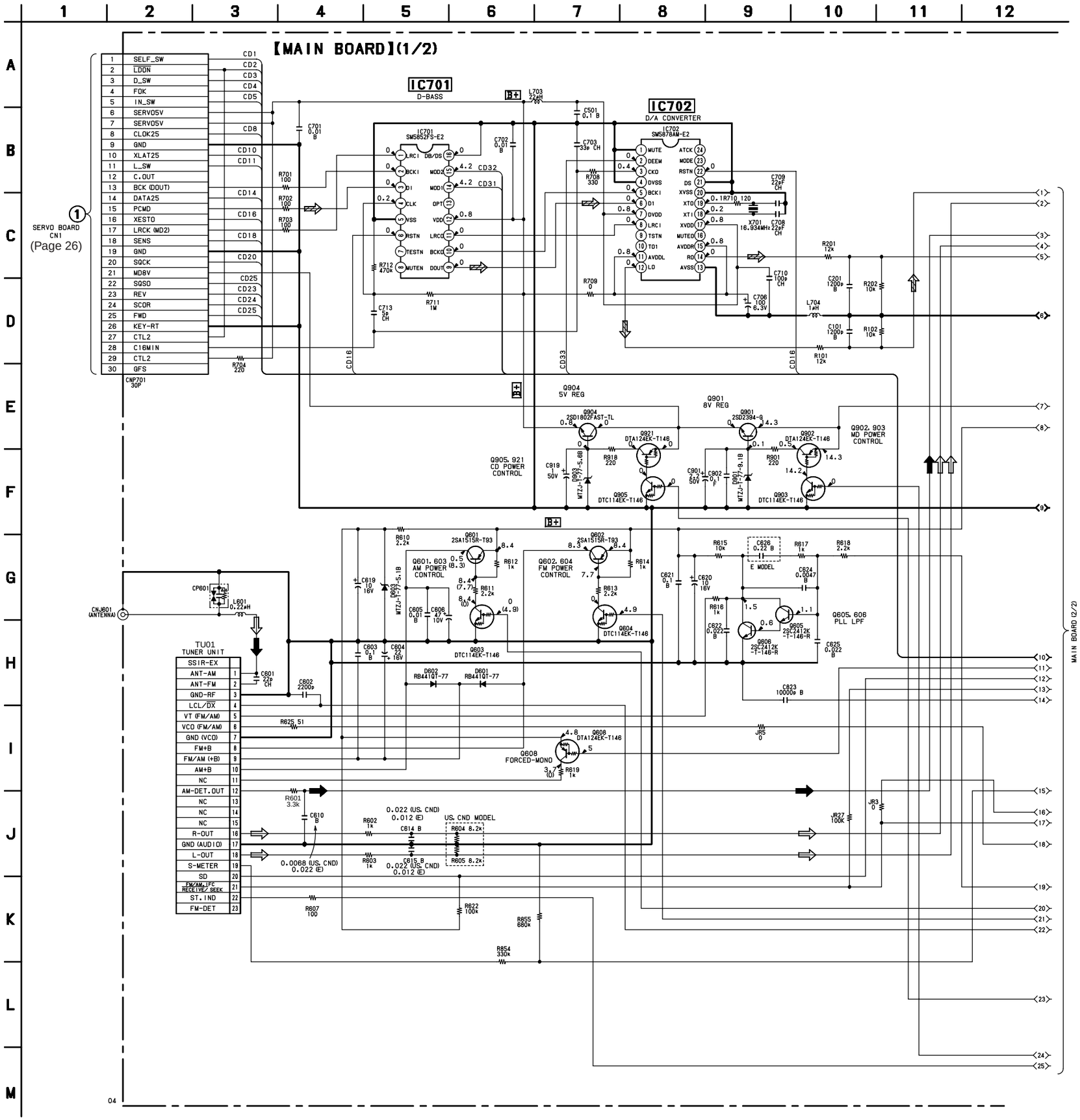
4-6. SCHEMATIC DIAGRAM — DISPLAY SECTION —



Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- ▭ : panel designation.
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.

4-8. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — • Refer to page 37 for IC Block Diagrams.



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- □ : panel designation.
- B+ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : AM
  < > : CD PLAY
  ✻ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : AM
  ⇛ : CD

4-9. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 34 for Note and page 37 for IC Block Diagrams.

【MAIN BOARD】(2/2)

IC401 ELECTRONIC VOLUME IC401 LC75374E

IC402 IC402 TDA7384 POWER AMP

IC801 IC801 μPD17705GC-526-3B9 SYSTEM CONTROL

Q101, 102, 201, 202 MUTE

Q401, 402 MUTE CONTROL

Q907, 908 BATT CHECK

Q906, 914, 915 SWITCH

Q916 5V REG

Q801 DTC114EK-T146 TEL MUTE

Q909, 919 ACC CHECK

Q910, 911 AMP/ANT REMOTE CONTROL

Q912, 913 ILL POWER CONTROL

E MODEL

S802 (FREQUENCY SELECT) FM50k AM9k / FM200k AM10k

US, CND MODEL

S801 RESET

J801 (REMOTE IN)

CNP801 18P

CNP801 12P

FRONT L-CH

REAR L-CH

REAR R-CH

FRONT R-CH

ATT

AMP/ANT REM

ACC

BATT

GND

F901 10A

TH901

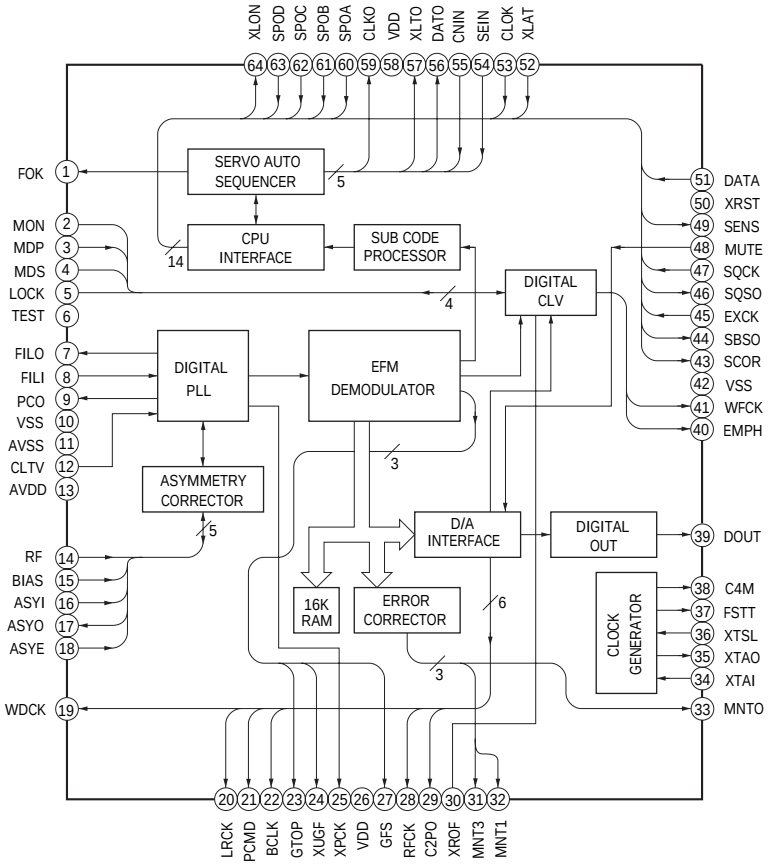
L901 CHOKE COIL

DISPLAY BOARD CNP851 (Page 29)

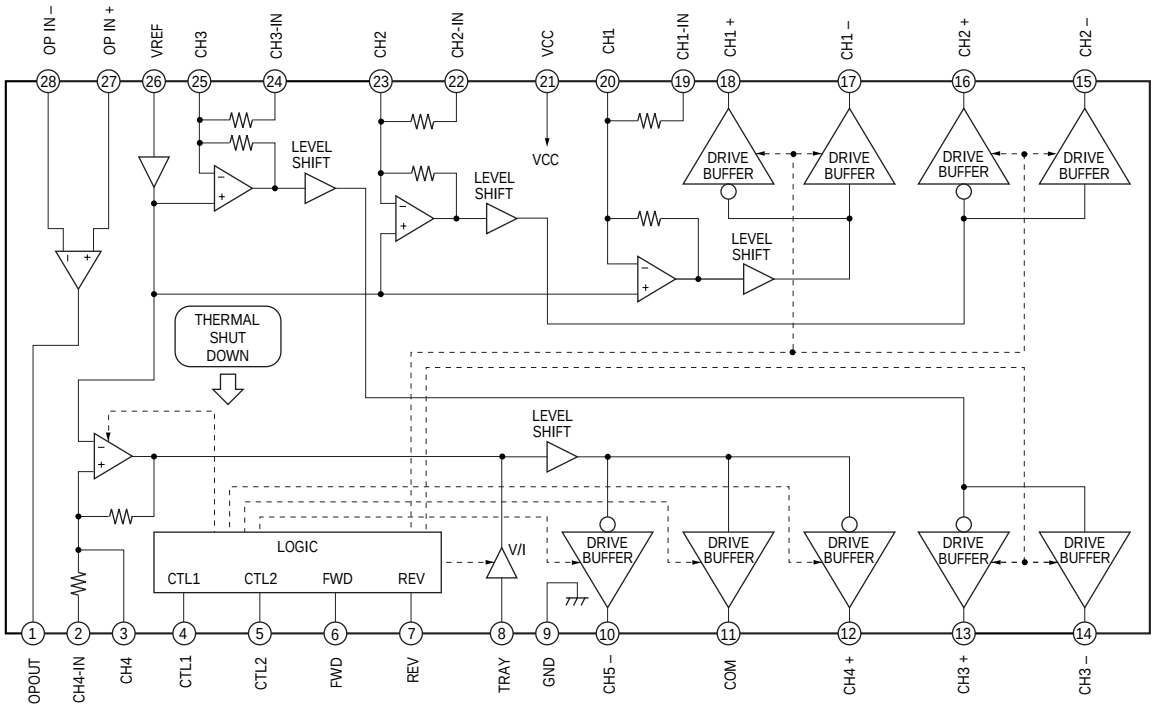
MAIN BOARD (1/2)

• **IC Block Diagrams**

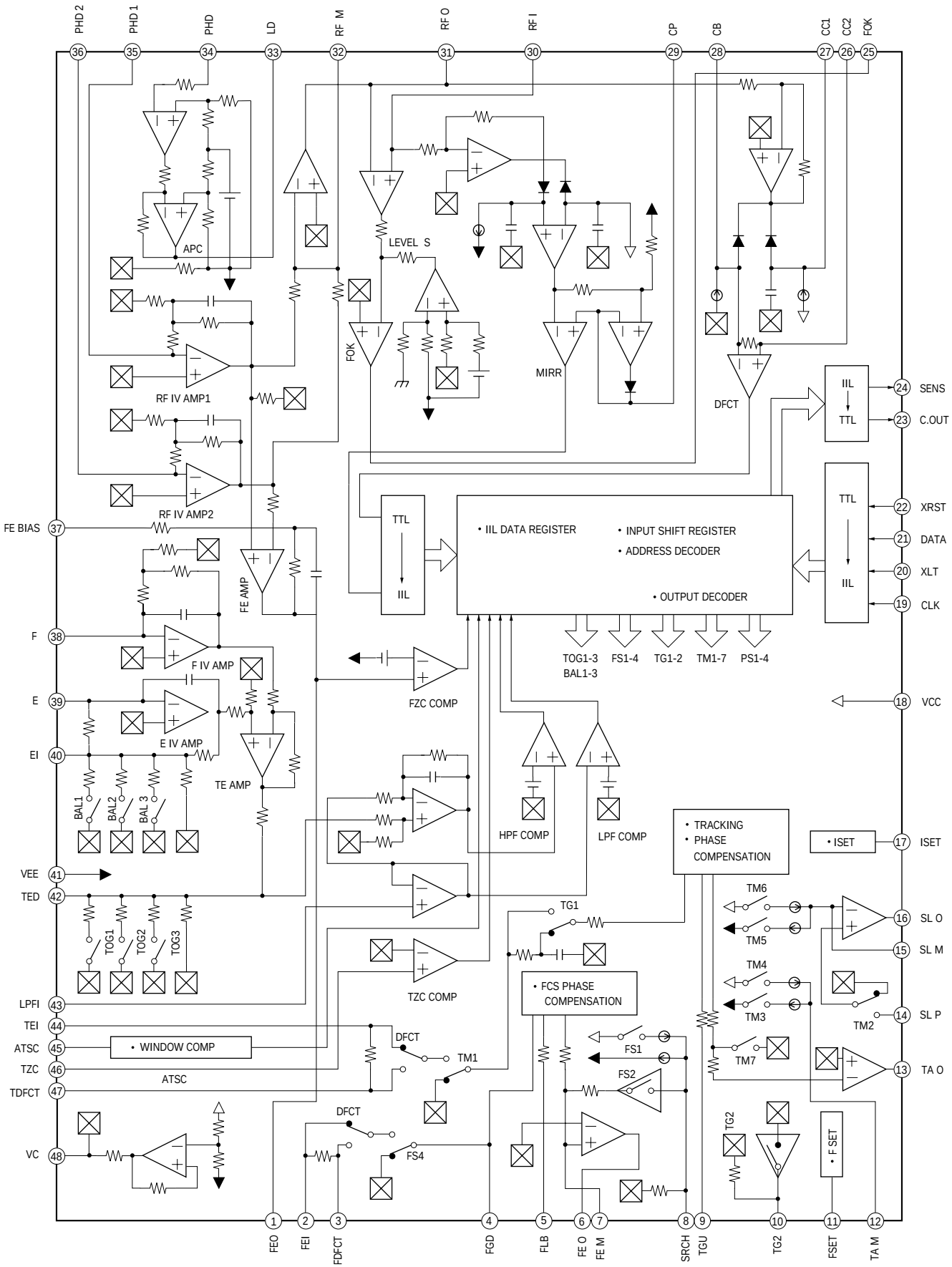
IC1 CXD2507AQ



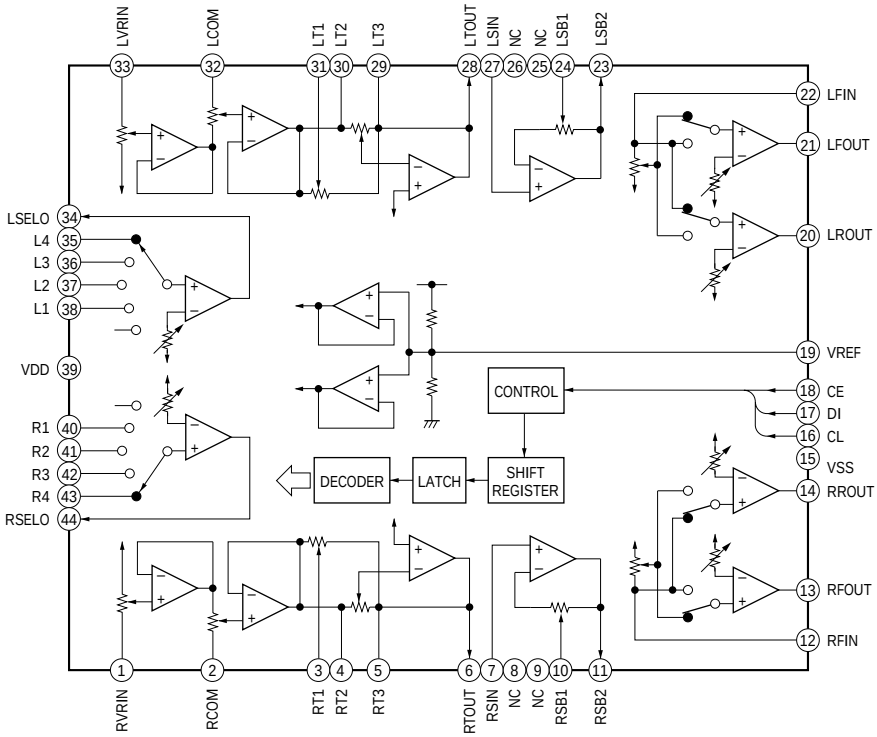
IC3 BA6796FP


OP IN – OP IN + VREF CH3 CH3-IN CH2 CH2-IN VCC CH1 CH1-IN CH1 + CH1 – CH2 + CH2 –
28 27 26 25 24 23 22 21 20 19 18 17 16 15
LEVEL SHIFT
VCC
DRIVE BUFFER
THERMAL SHUT DOWN
LOGIC
CTL1 CTL2 FWD REV
V/I
1 2 3 4 5 6 7 8 9 10 11 12 13 14
OPOUT CH4-IN CH4 CTL1 CTL2 FWD REV TRAY GND CH5 – COM CH4 + CH3 + CH3 –

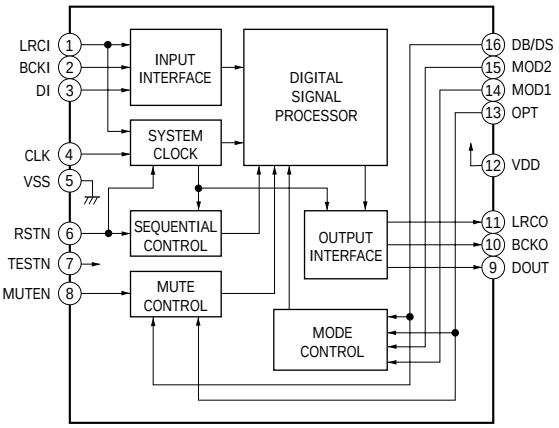
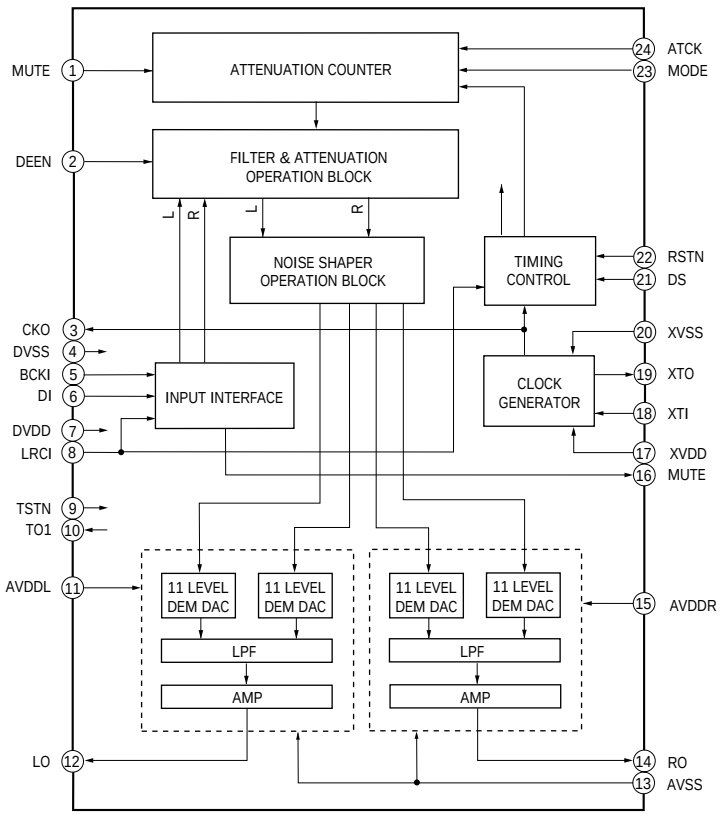
IC2 CXA1782BQ



IC401 LC75374E



IC701 SM5852FS



IC702 SM5878AM